

Note to users: The NCS (National Compensation Survey) is a BLS establishment survey of employee salaries, wages, and benefits. The survey is designed to produce data at local levels, within broad regions, and nationwide. The NCS will replace 3 existing BLS surveys: Employment Cost Index (ECI), Occupational Compensation Survey Program (OCSP), and Employee Benefits Survey (EBS).

The chief reasons for developing the NCS are: 1) Expand existing compensation programs by covering more occupations, by publishing more local data, and by representing all workers; 2) Eliminate duplicate data collection and processing requirements; 3) Reduce respondent burden; 4) Develop more efficient and streamlined collection and processing techniques; 5) Improve the quality of published data; 6) Produce a variety of local and national data; and 7) Address budget constraints.

The Bureau of Labor Statistics' Office of Compensation Levels and Trends (OCLT) is redesigning its compensation statistics to reflect the workplace of the 21st century. This initiative is named the National Compensation Survey (NCS); formerly, it was called COMP2000. Under the COMP2000 banner, BLS conducted six test surveys using new concepts and procedures for selecting occupations and determining the level of duties and responsibilities of those occupations.

The NCS will cover civilian workers in private industry establishments and State and local governments. It excludes private households, the Federal government, and agriculture. BLS began collecting the wage portion of the NCS starting in the fall of 1996 at which time the OCSP survey was discontinued.

#### Ready Facts Catalog for the York, PA National Compensation Survey:

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# Appendix A: Technical Note

This section provides basic information on the procedures and concepts used to produce the data contained in this bulletin. It is divided into three parts: Planning for the survey; data collection; and processing and analyzing the data. Although this section answers some questions commonly asked by data users, it is not a comprehensive description of all the steps required to produce the data.

## Planning for the survey

The overall design of the survey includes questions of scope, frame, and sample selection.

### Survey scope

This survey covered establishments employing 50 workers or more in goods-producing industries (mining, construction and manufacturing); service-producing industries (transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; and services industries); and State and local governments. Agriculture, private households, and the Federal Government were excluded from the scope of the survey. For purposes of this survey, an establishment is an economic unit that produces goods or services, a central administrative office, or an auxiliary unit providing support services to a company. For private industries in this survey, the establishment is usually at a single physical location. For State and local governments, an establishment is defined as all locations of a government entity.

The York, PA, Metropolitan Statistical Area consists of York County.

### Sampling frame

The list of establishments from which the survey sample was selected (sampling frame) was developed from State unemployment insurance reports. Due to the volatility of industries within the private sector, sampling frames were developed using the most recent month of reference available at the time the sample was selected. The sampling frame was reviewed prior to the survey and, when necessary, missing establishments were added, out-of-business and out-of-scope establishments were removed, and addresses, employment levels, industry classification, and other information were updated. Approximately one-fifth of the sample is reselected each year.

### Sample design

The sample for this survey area was selected using a two-stage stratified design with probability proportional to employment sampling at each stage. The first stage of sample selection was a probability sample of establishments. The sample of establishments was drawn by first stratifying the sampling frame by industry and ownership. The number of sample establishments allocated to each stratum is approximately proportional to the stratum employment. Each sampled establishment is selected within a stratum with a probability proportional to its employment. Use of this technique means that the larger an establishment's employment, the greater its chance of selection. Weights were applied to each establishment when the data were tabulated so that it represents similar units (by industry and employment size) in the economy that were not selected for collection. The second stage of sample selection, detailed below, was a probability sample of occupations within a sampled establishment.

## Data collection

The collection of data from survey respondents required detailed procedures. Field economists collected the data, working out of the Regional Office and visiting each establishment surveyed. Other contact methods, such as mail and telephone, were used to follow-up and update data.

### Occupational selection and classification

Identification of the occupations for which wage data were to be collected was a multistep process:

1. Probability-proportional-to-size selection of establishment jobs
2. Classification of jobs into occupations based on the Census of Population system
3. Characterization of jobs as full-time v. part-time, union v. nonunion, and time v. incentive
4. Determination of the level of work of each job

For each occupation, wage data were collected for those workers who met all the criteria identified in the last three steps. Special procedures were developed for jobs for which a correct classification or level could not be determined.

In step one, the jobs to be sampled were selected at each establishment by the BLS field economist during a personal visit. A complete list of employees was used for sampling, with each selected worker representing a job within the establishment.

As with the selection of establishments, the selection of a job was based on probability proportional to its size in the establishment. The greater the number of people working in a job in the establishment, the greater its chance of selection.

The number of jobs for which data were collected in each establishment was based on the establishment's employment size. Prior to 2002, the number of jobs selected ranged from 8 to 20. Beginning in 2002, the number of jobs selected followed this schedule:

<i>Number of employees</i>	<i>Number of selected jobs</i>
50–249	6
250 and over	8

The second step of the process entailed classifying the selected jobs into occupations based on their duties. The National Compensation Survey occupational classification system is based on the 1990 Census of Population. A selected job may fall into any one of about 480 occupational classifications, from accountant to wood lathe operator. For cases in which a job's duties overlapped two or more census classification codes, the duties used to set the wage level were used to classify the job. Classification by primary duties was the fallback.

Each occupational classification is an element of a broader classification known as a major occupational group (MOG). Occupations can fall into any of the following MOGs:

- Professional specialty and technical
- Executive, administrative, and managerial
- Sales
- Administrative support, including clerical
- Precision production, craft, and repair
- Machine operators, assemblers, and inspectors
- Transportation and material moving
- Handlers, equipment cleaners, helpers, and laborers
- Service occupations

Appendix B contains a complete list of all individual occupations, classified by the MOG to which they belong.

In step three, certain other job characteristics of the chosen worker were identified. First, the worker was identified as holding either a full-time or part-time job, based on the establishment's definition of those terms. Then, the worker was classified as having a time versus incentive job, depending on whether any part of pay was directly based on the actual production of the worker, rather than solely

on hours worked. Finally, the worker was identified as being in a union job or a nonunion job. See the "Definition of terms" section on the following page for more detail.

### **Occupational leveling**

In the last step before wage data were collected, the work level of each selected job was determined using an "occupational leveling" process. Occupational leveling ranks and compares all occupations randomly selected in an establishment using the same criteria.

For this survey, the level of each occupation in an establishment was determined by an analysis of each of 10 leveling factors. Nine of these factors are drawn from the U.S. Government Office of Personnel Management's Factor Evaluation System, which is the underlying structure for evaluation of General Schedule Federal employees. The tenth factor, supervisory duties, attempts to account for the effect of supervisory duties. It is considered experimental. The 10 factors are:

- Knowledge
- Supervision received
- Guidelines
- Complexity
- Scope and effect
- Personal contacts
- Purpose of contacts
- Physical demands
- Work environment
- Supervisory duties

Each factor contains a number of levels, and each level has an associated written description and point value. The number and range of points differ among the factors. For each factor, an occupation was assigned a level based on the written description that best matched the job. Within each occupation, the points for nine factors (supervisory duties was excluded) were recorded and totaled. The total determines the overall level of the occupation. A description of the levels for each factor is shown in appendix C.

Tabulations of levels of work for occupations in the survey follow the Federal Government's white-collar General Schedule. Point ranges for each of the 15 levels are shown in appendix D. It also includes an example of a job with its associated leveling factors, and a guide to help data users evaluate jobs in their firms

Wage data collected in prior surveys using the occupational leveling method were evaluated by BLS researchers using regression techniques. For each of the major occupational groups, wages were compared to the 10 occupational leveling factors (and levels within those factors). The analysis showed that several of the occupational leveling factors, most notably knowledge and supervision received, had strong explanatory power for wages. That is, as the levels within a given factor increased, the wages also increased.

## Collection period

Survey data were collected over a 13-month period for 60 metropolitan areas in the NCS program. For 20 small metropolitan areas, data were collected over a 4-month period. For each establishment in the survey, the data reflect the establishment's most recent information at the time of collection. The payroll reference month shown in the tables reflects the average date of this information for all sample units.

## Earnings

Earnings were defined as regular payments from the employer to the employee as compensation for straight-time hourly work, or for any salaried work performed. The following components were included as part of earnings:

- Incentive pay, including commissions, production bonuses, and piece rates
- Cost-of-living allowances
- Hazard pay
- Payments of income deferred due to participation in a salary reduction plan
- Deadhead pay, defined as pay given to transportation workers returning in a vehicle without freight or passengers

The following forms of payments were *not* considered part of straight-time earnings:

- Shift differentials, defined as extra payment for working a schedule that varies from the norm, such as night or weekend work
- Premium pay for overtime, holidays, and weekends
- Bonuses not directly tied to production (such as Christmas and profit-sharing bonuses)
- Uniform and tool allowances
- Free room and board
- Payments made by third parties (for example, tips, bonuses given by manufacturers to department store salespeople, referral incentives in real estate)
- On-call pay

To calculate earnings for various periods (hourly, weekly, and annual), data on work schedules also were collected. For hourly workers, scheduled hours worked per day and per week, exclusive of overtime, were recorded. Annual weeks worked were determined. Because salaried workers, exempt from overtime provisions, often work beyond the assigned work schedule, their typical number of hours actually worked was collected.

## Definition of terms

*Full-time worker.* Any employee that the employer considers to be full time.

*Incentive worker.* Any employee whose earnings are tied, at least in part, to commissions, piece rates, production bonuses, or other incentives based on production or sales.

*Level.* A ranking of an occupation based on the requirements of the position. (See the description in the technical note on occupational leveling through point factor analysis for more details on the leveling process.)

*Nonunion worker.* An employee in an occupation not meeting the conditions for union coverage. (See below.)

*Part-time worker.* Any employee that the employer considers to be part time.

*Time-based worker.* Any employee whose earnings are tied to an hourly rate or salary, and not to a specific level of production.

*Union worker.* Any employee is in a union occupation when all of the following conditions are met:

- A labor organization is recognized as the bargaining agent for all workers in the occupation
- Wage and salary rates are determined through collective bargaining or negotiations
- Settlement terms, which must include earnings provisions and may include benefit provisions, are embodied in a signed, mutually binding collective bargaining agreement

## Processing and analyzing the data

Data were processed and analyzed at the Bureau's National Office following collection.

## Weighting and nonresponse

Sample weights were calculated for each establishment and occupation in the survey. These weights reflected the relative size of the occupation within the establishment and of the establishment within the sample universe. Weights were used to aggregate data for the individual establishments or occupations into the various data series. Some of the establishments surveyed could not supply or refused to supply information. If data were not provided by a sample member, the weights of responding sample members in the same or similar "cells" were adjusted to account for the missing data. This technique assumes that the mean value of data for the nonrespondents equals the mean value of data for the respondents at some detailed "cell" level. Responding and nonresponding establishments were classified into these cells according to industry and employment size. Responding and nonresponding occupations within responding establishments were classified into cells that were additionally defined by major occupation group and job level.

Establishments that were determined to be out of business or outside the scope of the survey had their weights changed to zero. If only partial data were given by a sample establishment or occupation, or data were missing, the response was treated as a refusal.

## Survey response

	<i>Establish- ments</i>
Total in sampling frame	569
Total in sample	165
Responding	109
Out of business or not in survey scope	12
Unable or refused to provide data	44

In this survey, the nonresponse rates for all industries, private industry, and State and local government were within regular survey standards.

## Estimation

The wage series in the tables are computed by combining the wages for each sampled occupation. Before being combined, individual wage rates are weighted by: the number of workers; the sample weight, adjusted for nonresponding establishments and other factors; and the occupation's scheduled hours of work.

Not all calculated series met the criteria for publication. Before any series was published, it was reviewed to make sure that the number of observations underlying it was sufficient. This review prevented the publication of a series that could have revealed information about a specific establishment.

Estimates of the number of workers represent the total in all establishments within the scope of the study, and not the number actually surveyed. Because occupational structures among establishments differ, estimates of the number of workers obtained from the sample of establishments serve to indicate only the relative importance of the occupational groups studied.

## Percentiles

The percentiles presented in tables 6-1 through 6-5 are computed using earnings reported for individual workers in sampled establishment jobs and their scheduled hours of work. Establishments in the survey may report only individual-worker earnings for each sampled job. For the calculation of percentile estimates, the individual-worker hourly earnings are appropriately weighted and then arrayed from lowest to highest.

The published 10th, 25th, 50th, 75th, and 90th percentiles designate position in the earnings distribution within each published occupation. At the 50th percentile, the median, half of the hours are paid the same as or more than the rate shown, and half are paid the same as or less than the rate shown. At the 25th percentile, one-fourth of the hours are paid the same as or less than the rate shown. At the 75th percentile, one-fourth are paid the same as or more than the rate shown. The 10th and 90th percentiles follow the same logic.

## Data reliability

The data in this bulletin are estimates from a scientifically selected probability sample. There are two types of errors possible in an estimate based on a sample survey, sampling and nonsampling.

*Sampling errors* occur because observations come only from a sample and not from an entire population. The sample used for this survey is one of a number of possible samples of the same size that could have been selected using the sample design. Estimates derived from the different samples would differ from each other.

A measure of the variation among these differing estimates is called the standard error or sampling error. It indicates the precision with which an estimate from a particular sample approximates the average result of all possible samples. The relative standard error (RSE) is the standard error divided by the estimate. RSE data are provided alongside the earnings data in the bulletin tables.

The standard error can be used to calculate a "confidence interval" around a sample estimate. As an example, suppose a table shows that mean hourly earnings for all workers were \$12.79, with a relative standard error of 3.6 percent for this estimate. At the 90-percent level, the confidence interval for the estimate is \$13.55 to \$12.03 (1.645 times 3.6 percent times \$12.79 = \$0.76, plus or minus \$12.79). If all possible samples were selected to estimate the population value, the interval from each sample would include the true population value approximately 90 percent of the time.

*Nonsampling errors* also affect survey results. They can stem from many sources, such as inability to obtain information for some establishments, difficulties with survey definitions, inability of the respondents to provide correct information, or mistakes in recording or coding the data obtained. Although they were not specifically measured, the nonsampling errors were expected to be minimal due to the extensive training of the field economists who gathered the survey data by personal visit, computer edits of the data, and detailed data review.

Appendix table 1. **Number of workers<sup>1</sup> represented by the survey, by occupational group,<sup>2</sup>**  
**National Compensation Survey, York, PA, September 2003**

Occupational group	Full-time and part-time workers		
	Total	Private industry	State and local government
<b>All occupations</b> .....	83,700	73,400	10,300
All excluding sales .....	75,900	65,700	10,300
<b>White collar</b> .....	37,700	30,300	7,400
White-collar excluding sales .....	29,900	22,600	7,300
Professional specialty and technical .....	17,300	12,200	5,100
Professional specialty .....	13,700	8,700	5,000
Technical .....	3,600	3,500	—
Executive, administrative, and managerial .....	5,000	4,400	600
Sales .....	7,800	7,700	—
Administrative support, including clerical .....	7,600	5,900	1,600
<b>Blue collar</b> .....	33,800	33,100	800
Precision production, craft, and repair .....	8,700	8,600	—
Machine operators, assemblers, and inspectors .....	14,500	14,500	—
Transportation and material moving .....	3,400	2,800	500
Handlers, equipment cleaners, helpers, and laborers .....	7,300	7,100	—
<b>Service</b> .....	12,200	10,000	2,200

<sup>1</sup> The number of workers represented by the survey are rounded to the nearest 100. Estimates of the number of workers provide a description of size and composition of the labor force included in the survey. Estimates are not intended, however, for comparison to other statistical series to measure employment trends or levels. Both full-time and part-time workers were included in the survey.

<sup>2</sup> A classification system including about 480 individual occupations is used to cover all workers in the civilian economy. See appendix B for more information.

NOTE: Dashes indicate that no data were reported or that data did not meet publication criteria.